

# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

# PCT

To:

see form PCT/ISA/220

## WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing  
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference  
see form PCT/ISA/220

**FOR FURTHER ACTION**  
See paragraph 2 below

International application No.  
PCT/GB2004/003454

International filing date (day/month/year)  
12.08.2004

Priority date (day/month/year)  
13.08.2003

International Patent Classification (IPC) or both national classification and IPC  
G01N27/49

Applicant  
ANGLO EUROPEAN DESIGN ENGINEERS LIMITED

### 1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☒ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement.
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

### 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

### 3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



European Patent Office  
D-80298 Munich  
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**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

**10/566867**

International application No.  
PCT/GB2004/003454

IAP20 Rev. 01 ST/PTD 02 FEB 2006

**Box No. I Basis of the opinion**

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.  
☐ This opinion has been established on the basis of a translation from the original language into the following language, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
  - a. type of material:  
☐ a sequence listing  
☐ table(s) related to the sequence listing
  - b. format of material:  
☐ in written format  
☐ in computer readable form
  - c. time of filing/furnishing:  
☐ contained in the international application as filed.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/003454

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**Box No. II    Priority**

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1. ☒ The following document has not been furnished:

☒ copy of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(a)).

☐ translation of the earlier application whose priority has been claimed (Rule 43*bis*.1 and 66.7(b)).

Consequently it has not been possible to consider the validity of the priority claim. This opinion has nevertheless been established on the assumption that the relevant date is the claimed priority date.

2. ☐ This opinion has been established as if no priority had been claimed due to the fact that the priority claim has been found invalid (Rules 43*bis*.1 and 64.1). Thus for the purposes of this opinion, the international filing date indicated above is considered to be the relevant date.

3. Additional observations, if necessary:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/GB2004/003454

**Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability**

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

- ☐ the entire international application,
- ☒ claims Nos. 1-12,20,21

because:

- ☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):
- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. are so unclear that no meaningful opinion could be formed (*specify*):
- ☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.
- ☒ no international search report has been established for the whole application or for said claims Nos. 1-12,20,21
- ☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:
  - the written form ☐ has not been furnished
  - ☐ does not comply with the standard
  - the computer readable form ☐ has not been furnished
  - ☐ does not comply with the standard
- ☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.
- ☐ See separate sheet for further details

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
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**Box No. V Reasoned statement under Rule 43b/s.1(a)(i) with regard to novelty, inventive step or  
industrial applicability; citations and explanations supporting such statement**

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**1. Statement**

Novelty (N)	Yes: Claims	16,18
	No: Claims	13-15,17,19
Inventive step (IS)	Yes: Claims	
	No: Claims	13-19
Industrial applicability (IA)	Yes: Claims	13-19
	No: Claims	

**2. Citations and explanations**

**see separate sheet**



**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING  
AUTHORITY (SEPARATE SHEET)**

PCT/GB2004/003454

**Re Item V.**

The following document is referred to in this communication:

D1: WO-A-01 81911

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 13 is not new in the sense of Article 33(2) PCT.

Document D1 discloses an electrochemical gas sensor comprising the following features:

- a housing (housing component 65: see Fig. 1) having a wall and a plurality of connection apertures through said wall (holes 61: see Fig. 1), said apertures having bores (see Fig. 1);
- sensing and counter electrodes housed in the housing (p9, lines 16-20);
- a liquid electrolyte contained in the housing in chemical contact with the electrodes (p10, lines 13-18);
- a plurality of current collectors (pin 50: see Fig. 1) in electrical contact with respective ones of the respective electrodes (p9, lines 26-33);

Each of the current collectors is adapted for direct contact with one of the sensor's electrodes (p9, lines 26-33: "direct contact" is taken to mean direct electrical contact). A compliant seal is present (o-ring 100: see Fig. 1), adapted to fit in one of the connection apertures, the current collector extending through the compliant seal (see Fig. 2). The seal is in contact with the current collector substantially throughout its length along the current collector (see Fig. 2) and is of an elastomeric material (p10, line 36). The arrangement is such that compressive stress induced in the seal by reaction from the connection aperture urges the seal into distributed sealing contact with the current collector substantially throughout the length of the seal (p10, line 36 - p11, line 17).

The current collectors of the electrochemical gas sensor disclosed in D1 extend within their seals through respective ones of the apertures from their electrodes to outside their housing (see Fig. 2). The compliant seals are in compression against both their current collectors and at least part of the bores of their apertures, whereby the current collectors provide means for electrical contact outside the housing and the apertures are sealed (p10, line 36 - p11, line 17).

Claim 13 is thus not novel with respect to D1.

The further features of claims 14-16, which would appear to be dependent on claim 13 rather than on claim 12, appear to be either known from the prior art (claims 14 and 15) or contain design features with no inventive merit (claim 16).

The only feature of claim 13 which is not explicitly present in the wording of claim 17 is the extension of the current collectors through their apertures within their seals. This feature would however appear to be present in claim 1 ("the current collector extending through the compliant seal"), all the features of which are apparently part of claim 17. Thus, it would appear that claim 17 does include all the features of claim 13 and should therefore be dependent on that claim (Rule 6.4 PCT).

With further reference to claim 17, the location of current collectors "preliminarily" would appear to refer to a method and not to an apparatus and for this reason apparatus claim 17 is unclear. This lack of clarity notwithstanding, claim 17 does not seem to offer any features which render the subject-matter of the claim novel (see D1, p11, line 8 - p12, line 28).

The additional features of claim 18 would appear to be standard design options.

Claim 19 is not novel.

The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

# PATENT COOPERATION TREATY

From the RECEIVING OFFICE

# PCT

Nigel Brooks Hill Hampton East Meon Petersfield Hampshire GU32 1QN	<b>NIGEL BROOKS</b> RECEIVED  <b>17 AUG 2004</b> 1 <sup>st</sup> Diary Entry <div style="border: 1px solid black; height: 20px; width: 100%;"></div> 2 <sup>nd</sup> Diary Entry <div style="border: 1px solid black; height: 20px; width: 100%;"></div> DUE DATE <div style="border: 1px solid black; height: 20px; width: 100%;"></div>
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## NOTIFICATION OF THE INTERNATIONAL APPLICATION NUMBER AND OF THE INTERNATIONAL FILING DATE

(PCT Rule 20.5(c))

Date of mailing <i>(day/month/year)</i> <span style="float: right; font-family: cursive; font-size: 1.2em;">16-08-04</span>		
Applicant's or agents's file reference <b>2257/PCT</b>	<b>IMPORTANT NOTIFICATION</b>	
International application No. <b>PCT/GB2004/003454</b>	International filing date <i>(day/month/year)</i> <b>12/08/2004</b>	Priority date <i>(day/month/year)</i> <b>11/08/2003</b>
Applicant <b>Anglo European Design Engineers Limited et al</b>		
Title of the invention <b>Electrochemical Gas Sensor</b>		

1. The applicant is hereby notified that the international application has been accorded the international application number and the international filing date indicated above.

2. The applicant is further notified that the record copy of the international application:

- ☒ was transmitted to the International Bureau on 16 AUGUST 2004
- ☐ has not yet been transmitted to the International Bureau for the reason indicated below and a copy of this notification has been sent to the International Bureau\*:
- ☐ because the necessary national security clearance has not yet been obtained.

☐ because *(reason to be specified)*:

\* The International Bureau monitors the transmittal of the record copy by the receiving Office and will notify the applicant (with Form PCT/IB/301) of its receipt. Should the record copy not have been received by the expiration of 14 months from the priority date, the International Bureau will notify the applicant (Rule 22.1(c)).

Name and mailing address of the receiving Office The Patent Office Cardiff Road, Newport South Wales NP10 8QQ	Authorized officer  <b>J.R. LLOYD-THOMAS</b>
Facsimile No.	Telephone No. <b>01633 814346</b>